What Is Claimed Is:

1. An isolated protein-encoding nucleic acid fragment of the *Staphylococcus aureus* genome, wherein said fragment consists of the nucleotide sequence of any one of the fragments of SEQ ID NOS:1-5,191 depicted in Tables 2 and 3, or a degenerate variant thereof.

2. A vector comprising any one of the fragments of claim 1.

3. An isolated fragment of the *Staphylococcus aureus* genome, wherein said fragment modulates the expression of an operably linked open reading frame, wherein said fragment consists of the nucleotide sequence from about 10 to 200 bases in length which is 5' to any one of the open reading frames depicted in Tables 2 and 3 or a degenerate variant thereof.

4. A vector comprising any one of the fragments of the *Staphylococcus aureus* genome of claim 1.

5. An isolated polypeptide encoded by any of the fragments of claim 1.

6. An isolated polynucleotide molecule encoding any one of the polypeptides of claim 5.

7. An antibody which selectively binds to any one of the polypeptides of claim 5.

8. An isolated polypeptide comprising an amino acid sequence having at least 95% identity to a *Staphylococcus aureus* polypeptide amino acid sequence selected from the group consisting of SEQ ID NOS:5,192 to 5,255.

9. The isolated polypeptide of Claim 8 wherein the isolated polypeptide comprises an amino acid sequence identical to that of a *Staphylococcus aureus* polypeptide selected from the group consisting of SEQ ID NOS:5,192 to 5,255.

10. An isolated *Staphylococcus aureus* polypeptide antigen comprising at least one epitope derived from a *Staphylococcus aureus* polypeptide of claim 9.

11. An isolated polypeptide antigen of claim 10 selected from the group consisting of the epitopic sequences listed in Table 4.

12. A diagnostic kit for detecting *Staphylococcus aureus* infection comprising

(a) an isolated polypeptide antigen of Claim 10, and

(b) means for detecting the binding of an antibody contained in a biological fluid to said antigen.

13. A vaccine composition comprising

a polypeptide of Claim 10 present in a pharmaceutically acceptable carrier.

14. A method of vaccinating an individual against *Staphylococcus aureus* infection comprising, administering to an individual the vaccine composition of Claim 13.

15. A method for producing a polypeptide in a host cell comprising the steps of:

(a) incubating a host containing a heterologous nucleic acid molecule whose nucleotide sequence consists of any one of the fragments of claim 1, under conditions where said heterologous nucleic acid molecule is expressed to produce said protein, and

(b) isolating said protein.